

AIRPROX REPORT No 2023132

Date: 23 Jun 2023 Time: 1347Z Position: 5203N 00106W Location: Turweston

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Beagle Pup
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Turweston	Turweston
Altitude/FL	FL012	NK
Transponder	A, C, S	A
Reported		
Colours	Black, White	White, Blue
Lighting	Beacon, Strobes	Landing, Nav, Anti-Cols, Beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1000ft	1000ft
Altimeter	QFE (1009hPa)	QFE
Heading	090°	020°
Speed	90kt	97kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	None
Separation at CPA		
Reported	100ft V/0m H	20ft V/150m H
Recorded	NK V/<0.1NM H	



THE PA28 PILOT reports that they were flying an instructional sortie and remaining in the circuit at Turweston. Prior to take-off, [the Beagle Pup pilot] was heard to call Turweston Radio for joining information (RW27RH and QFE 1009hPa), which was passed along with the fact that there was one aircraft in the circuit and one (the PA28) about to depart into the circuit. The pilot of [Beagle Pup c/s] stated that they would fly an overhead join. As the student pilot in the PA28 rolled out onto a downwind heading, the Beagle Pup pilot called 'crosswind'. Shortly after this, the student pointed out that the Beagle Pup was at "one o'clock and coming straight for us"; the student also initiated a climb at this point, before the instructor took control. Shortly afterwards, the Beagle Pup passed directly beneath the PA28, by then with a vertical separation of 100-200ft, and turned onto the downwind leg. They carried out an orbit for spacing and the instructor alerted the Beagle Pup pilot to the proximity that the 2 aircraft had come to one another, and that they had expected the other pilot to give way after the overhead join as the PA28 was 'established circuit traffic'. The pilot of the Beagle Pup responded that they had "had [PA28 C/S] in sight". Although the actual separation mitigated the risk of collision, had neither the instructor or student in the PA28 seen the Beagle Pup as it approached, a collision would have been certain.

The pilot assessed the risk of collision as 'Medium'.

THE BEAGLE PUP PILOT reports that after requesting joining information from Turweston Radio, they called "[C/S] overhead descending dead side." The response from Turweston was "Roger" this was at 2000ft QFE. They descended to crosswind and called "[C/S] crosswind". The response from Turweston was "Roger" then they turned downwind and called "[C/S] downwind" as they saw the other aircraft appear to be heading towards them. Both aircraft lined up with the downwind leg at 1000ft, flying parallel with separation of about 150m. They were on the inside of the circuit, right-hand, in preparation to land on RW27. The other pilot then reported Airprox and said [the two aircraft] could have hit and ended up

on the A road. They felt that there was fair distance to keep clear. They stated over the radio that they could see them [the PA28]. The other plane then flew upwards and over the top of them out of sight, then the other pilot said they'd make a report on landing.

The pilot assessed the risk of collision as 'Low'.

THE TURWESTON AGO reports that they were working as Air/Ground at Turweston on 23rd June. The Beagle Pup pilot had PPR'd earlier in the day and was expected to arrive mid-late afternoon. [The pilot of the PA28 C/S] called up for airfield information for circuit work and the information was duly passed to the aircraft with the information that there was one aircraft already established in the circuit performing a circuit and aircraft joining. [The Beagle Pup pilot] called up for joining instructions and the runway in use (RW27 RH circuit) and QFE were passed to the crew, along with the information of one established in the circuit and one departing to perform circuits. The Beagle Pup pilot acknowledged the information and stated they would be descending deadside. Whilst they were descending, the established circuit traffic landed and another locally-based PA28 had departed. At this time, there was also another aircraft joining to land (PA28) and they were late downwind, then the [Airprox PA28 pilot] called stating they were ready for departure. They were advised that the runway was vacant, and the wind speed and direction and they departed. As they climbed-out, the second joining aircraft called finals, acknowledged the PA28 climbing-out and, on receipt of wind speed and direction and that the runway was vacant with the departing traffic in sight, landed. [The PA28 pilot] called entering downwind as [the Beagle Pup pilot] called crosswind and they noted that [Beagle Pup C/S] passed directly over the tower. They looked down to input information into the computer regarding the departures and arrivals, as well as to advise [the pilot of] another joining aircraft (an AC114) of the aerodrome details. Around this time, [the pilot of] another aircraft (a CAP10) was preparing to depart and was finishing their engine checks. At this point they heard the instructor on [the PA28] complain strongly to [the Beagle Pup pilot] about their method of joining, lack of situational awareness and level of airmanship on joining a circuit with established traffic plus that if they "...hadn't seen him they would both be in a smoking heap on the A43". The instructor also commented that they had to take avoiding action to prevent a collision. It was as the first call was made that the AGO looked up and could see [the PA28] at a high angle of bank turning towards the airfield - they knew this to be the case as the aircraft is predominantly black with a light grey cabin roof - this action being taken in order to make the PA28 more visible to [the Beagle pup pilot] in their opinion. [The Beagle Pup pilot's] radio response was just that they "had seen him and were aware of his position". The PA28 instructor was still upset at this response and the [Beagle Pup pilot's] actions and declared that were going to report the actions of the Beagle Pup pilot. Following this avoiding action and exchange, [the Beagle Pup pilot] continued with their downwind leg as the CAP10 departed (following runway and wind information as usual), the PA28 repositioned to be No2 with the AC114 joining shortly after. The PA28 did fly one complete touch and go circuit before landing. It is [the AGO's] belief that the detail originally planned for the student in the PA28 was cut short as a result of this incident.

Factual Background

The weather at Oxford was recorded as follows:

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METAR EGTK 231320Z 23011KT 200V270 9999 FEW044 25/13 Q1023=  
METAR EGTK 231350Z 23011KT CAVOK 24/12 Q1023=
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Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The PA28 could be seen on the radar replay and identified using Mode S data. The aircraft believed to be the Beagle Pup could be seen squawking 7400 with no Mode C. The squawk 7400 is associated with UAV lost link, but was likely to have been entered in error. Although there was no Mode S to identify the aircraft, the profile of the aircraft matched that described by the Beagle Pup pilot.

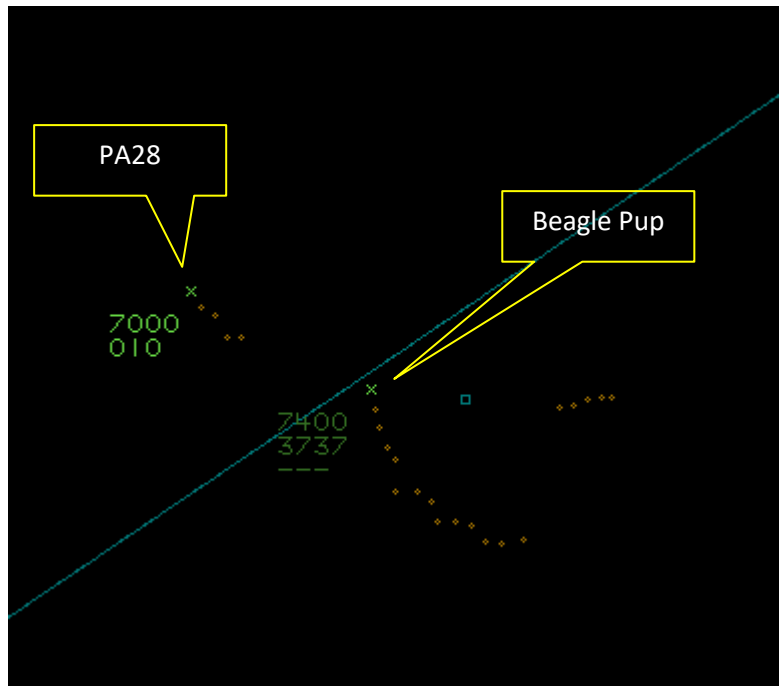


Figure 1 - 1346:30

The radar replay showed the PA28 climbing out into the circuit and at Figure 2 could be seen established downwind, indicating FL012 (radar QNH 1024hPa). The Beagle Pup could be seen flying crosswind, although with no Mode C it was not possible to know the height of the aircraft.

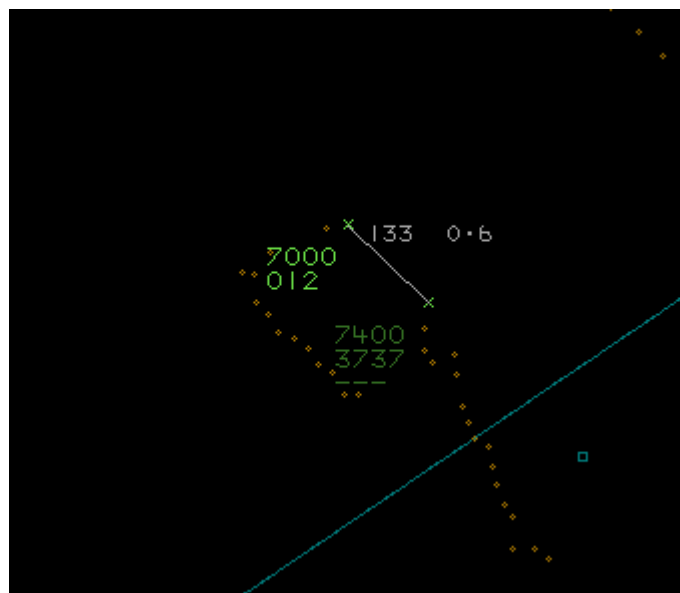


Figure 2 - 1347:06

The two aircraft continued to close until CPA at 1347:26 when they were less than 0.1NM horizontally separated, the climb described by the PA28 pilot could be seen in the following two radar sweeps, see Figure 4.

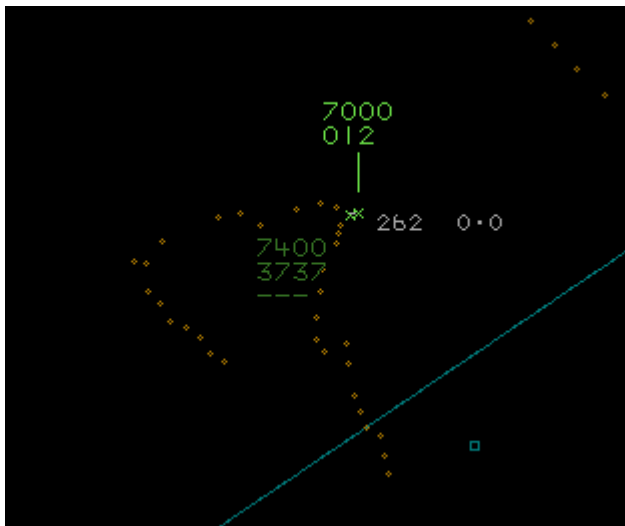


Figure 3 - CPA 1347:26

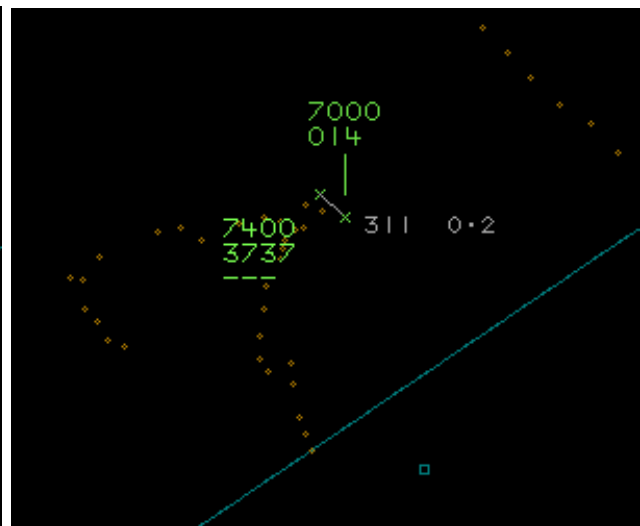


Figure 4 - 1347:34

The PA28 and Beagle Pup pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.¹ An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.²

Summary

An Airprox was reported when a PA28 and a Beagle Pup flew into proximity in the Turweston visual circuit at 1347Z on Friday 23rd June 2023. Both pilots were operating under VFR in VMC, both pilots were in receipt of an AGCS from Turweston.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs and a report from the AGO involved. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first looked at the actions of the PA28 pilot. They had taken-off to join the visual circuit and, although they had been aware that the Beagle Pup had been joining the visual circuit, they had not expected it to conflict with them in the downwind position. The pilot had seen the Beagle Pup late, as it had been heading directly towards them (**CF6**) but had managed to take avoiding action to increase the separation. Members commented that whilst it had been understandable that the PA28 pilot had been somewhat irritated at the position in which they found themselves, through no fault of their own, nevertheless, it was advisable not to express this over the RT, but simply to report the Airprox and have any further discussion on the ground. Members noted that the PA28 was a flying school aircraft and were somewhat surprised that it had not been fitted with any additional electronic conspicuity equipment, which on this occasion may have provided some additional information to aid visual acquisition. It was for pilots to decide on their own requirements for additional equipment according to their needs and the Board wished to highlight that additional funding has been made available for electronic conspicuity devices through the CAA's Electronic Conspicuity Rebate Scheme, which is available until 31st March 2024.³

Turning to the actions of the Beagle Pup pilot, they described calling to join the circuit and that they had received acknowledgements from the AGO. From the description given, members wondered whether the pilot had been expecting more from the AGO, rather than just an acknowledgement of their calls, and members wished to highlight to pilots that an AGO is not a controller and does not have the authority

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

³ <https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/>

to issue clearances or to sequence traffic. Consequently, the Beagle Pup pilot was never going to get anything other than an acknowledgement of their calls and if they had been uncertain of the circuit traffic position they should have requested further information. That being said, on first calling, the AGO had given Traffic Information on the PA28 due to depart into the visual circuit. Furthermore, the Board considered that the pilot should have heard the PA28 pilot making calls on the RT. However, members thought that the Beagle Pup pilot had not assimilated that this traffic would have affected them in the downwind position (CF4). The pilot reported conducting an overhead join, but flying members opined that in fact the join had been more akin to a crosswind join, because the pilot had not taken time in the overhead to fully identify where all the circuit traffic had been positioned before descending to join the circuit downwind (CF2). As a consequence, they had not been aware of the PA28 climbing up into the circuit and had not integrated with it (CF1, CF3). Members recommended that pilots familiarise themselves with the overhead join procedure and noted that the CAA's Skyway Code gave a good description of the procedure. The Board noted that the Beagle Pup had been fitted with a CWS and it would have been expected that this would have detected the transponder on the PA28; no alert had been reported, but it was not known whether this had been because no alert had been received, or because the pilot had simply not remembered receiving one (CF5). The pilot described seeing the PA28 heading towards them, which members assessed as a late sighting (CF6).

When determining the risk of the Airprox, members considered the reports of both pilots, the report from the AGO together with the NATS radar screenshots. They thought that the PA28 pilot had described a late sighting scenario, but one where, fortunately, they had been able to take avoiding action to increase the separation. Nevertheless, the Board thought that safety had been much reduced and that there had been a risk of collision (CF7); Risk Category B.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023132			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
	• Tactical Planning and Execution			
2	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
3	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
	• Situational Awareness of the Conflicting Aircraft and Action			
4	Human Factors	• Understanding/Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
	• Electronic Warning System Operation and Compliance			
5	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			
6	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
	• Outcome Events			
7	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk:

B.

Safety Barrier Assessment⁴

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because the AGO had not been required to sequence aircraft in the visual circuit.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the Beagle Pup had not integrated with the traffic already established in the circuit.

Tactical Planning and Execution was assessed as **partially effective** because the Beagle Pup had not used the overhead join to sufficiently assess the positions of the circuit traffic before descending crosswind.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Beagle Pup pilot had not assimilated the Traffic Information from the AGO and the RT.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because, although it would have been expected that the TAS in the Beagle Pup would detect the transponder in the PA28, no alert had been reported.

See and Avoid were assessed as **partially effective** because it had been a late sighting by both pilots.

		Airprox Barrier Assessment: 2023132		Outside Controlled Airspace					
				Effectiveness					
				Barrier Weighting					
				0%	5%	10%	15%	20%	
		Barrier	Provision	Application					
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar to 5%]					
	Manning & Equipment	✓	✓	[Green bar to 2.5%]					
	Situational Awareness of the Confliction & Action	✓	○	[Red box from 5% to 15%]					
	Electronic Warning System Operation and Compliance	●	●	[Grey bar to 2.5%]					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	⚠	[Yellow bar to 10%]					
	Tactical Planning and Execution	✓	⚠	[Yellow bar to 10%]					
	Situational Awareness of the Conflicting Aircraft & Action	✓	✗	[Red bar to 20%]					
	Electronic Warning System Operation and Compliance	⚠	✗	[Red bar to 15%]					
	See & Avoid	⚠	⚠	[Yellow bar to 20%]					
Key:		Full	Partial	None	Not Present/Not Assessable	Not Used			
Provision	✓	⚠	✗	●					
Application	✓	⚠	✗	●					
Effectiveness	[Green]	[Yellow]	[Red]	[Grey]	[Red box]				

⁴ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).